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1973
Montana Power Company
The Montana Power Company long range plan

THE MONTANA POWER COMPANY'S

LONG RANGE PLAN

JULY 15, 1973

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THE MONTANA POWER COMPANY'S
LONG-RANGE PLAN
MONTANA UTILITY SITING ACT 1973, SECTION 14

July 15, 1973

I. WHAT IS THE LOCATION, SIZE AND TYPE OF ALL UTILITY FACILITIES TO BE OWNED AND OPERATED BY THE MONTANA POWER COMPANY WHICH ARE PROJECTED AS OF July 15, 1973, TO COMMENCE DURING THE ENSUING TEN YEARS?

Montana Power Company plans to complete construction of two 350 megawatt coal-fired steam generation units at Colstrip, Montana. The first 350 megawatt unit (Colstrip Unit No. 1) is scheduled for commercial operation in July of 1975, and the second 350 megawatt unit (Colstrip No. 2) is scheduled for commercial operation in July of 1976. Montana Power Company is considering construction of two 700 megawatt coal-fired steam generation units which would be scheduled for commercial operation to commence in July of 1978 and July 1979. If such two 700 megawatt units do not materialize, Montana Power Company is considering construction of a third 350 megawatt unit to be constructed at Colstrip in 1979. (See the attached "Generation and Transmission - Significant Additions 1973-1982, April 1, 1973, marked Exhibit 'A'".)

For general system improvement on The Montana Power Company system, the following lines are presently under construction or proposed:

1. A 230 kilovolt line from Billings through Hardin to Colstrip to furnish power to the Colstrip area.

2. A 230 kilovolt line from Billings to Great Falls. This line is proposed for construction in 1973-74.

If the two 700 megawatt plants mentioned above are constructed, two 500 kilovolt transmission lines will be constructed extending from Colstrip generally through an area north of Billings and through the Helena area to Hot Springs, Montana.

If the two 700 megawatt plants are not constructed, the 500 kV transmission lines will also not be constructed. Instead it is proposed that two 230 kilovolt lines will be constructed from Colstrip to a point north of Billings. In addition, a second Billings-Great Falls 230 kilovolt line and a second Billings-Anaconda 230 kilovolt line will have to be added for general system improvement. Also, a 100 megawatt gas turbine will be required somehwere on The Montana Power Company system to meet generation needs by July 1978.

Reference is made to the attached Exhibit entitled "Generation and Transmission - Significant Additions" attached hereto and marked Exhibit "A".

The Montana Power Company also plans to construct several needed electric transmission lines in addition to the electric transmission lines related to the Colstrip development referred to above. These additional electric transmission lines are set forth on the attached "Projected Additions to Montana Power Company's Transmission System" marked Exhibit "B". In reference to Exhibit "B", the symbol "ss" in a particular column year indicates the date of survey work on the particular projects involved. The "xxxxx" symbol in a particular column year indicates the date in which actual construction will occur on a particular project involved. (See Exhibit "B" attached.)

The Montana Power Company has filed an application with the Federal Power Commission for the construction of two hydroelectric projects referred to as Buffalo Rapids No. 2 and Buffalo Rapids No. 4 to be located on the Flathead River in Sanders and Lake Counties, Montana. The Pacific Northwest Power Company, in which the Company has 25% ownership, has filed an application with the Federal Power Commission to construct a hydroelectric project referred to as the High Mountain Sheep Project, located on the Snake River between the States of Idaho and Oregon. If the Federal Power Commission issues a license to construct either or both the aforementioned projects and said projects are otherwise approved, then The Montana Power Company would necessarily re-evaluate its proposed transmission and generation facilities.

If additional natural gas in not discovered in Montana and obtained by The Montana Power Company, or if additional gas is not obtained from Canada, Montana Power Company may consider a coal gasification plant to be located somewhere in Eastern Montana.

II. WHAT DOES THE MONTANA POWER COMPANY DO TO COORDINATE ITS LONG-RANGE PLAN FOR FACILITIES AND ITS SUPPLY AND DEMAND FOR ELECTRICAL ENERGY WITH OTHER UTILITIES IN ITS REGION?

The Montana Power Company's primary effort to coordinate its utility facilities and supply and demand of electrical energy with other utilities in its region is conducted through the Western Systems Coordinating Council.

The Western Systems Coordinating Council was organized August 4, 1967, to assure reliability of bulk power electric systems in the West. This assurance now includes adequacy of supply. Member electric systems now include 19 investor owned and 21 publicly or cooperative owned systems as well as 13 affiliate member electric systems. The area served includes 13 western states and Canada with a population of 26,000,000 in an area of approximately 1.9 million square miles.

At the end of 1970 the 40 member systems and nonmember systems have a connected generating capacity of approximately 67 million kilowatts and served a demand of approximately 52 million kilowatts. Directly or indirectly they serve all of Arizona, California,

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https://archive.org/details/montanapowercomp1973mont

Colorado, Idaho, Nevada, Oregon, Utah and Washington and parts of Montana, Nebraska, New Mexico, Texas, Wyoming and British Columbia.

The aim of the Council is to provide a formal means for exchange of data and information and to make regional studies and recommendations that will have favorable bearing on the reliability and adequacy of electric service in the West.

Headed by an Executive Committee, the Council has four standing committees:

1. Planning Coordination Committee
2. Operations Committee
3. Environmental Committee
4. Public Information Committee

The Planning Coordination Committee is charged with accumulating necessary data and performing regional studies related to the reliability of the interconnected bulk power systems. It also collects and organizes information on loads, resources, construction programs and commercial operating dates of planned facilities. The Planning Committee's recommendations are made to the Executive Committee.

The Operations Committee reviews and analyzes operating procedures and problems relating to the reliability of interconnected systems and handles other assignments directed to it by the Executive Committee. It also recommends to the Executive Committee new or modified operating policies and procedures for the guidance of member utilities.

The Environmental Committee is forming guidelines for the siting of new power generating stations and aesthetic treatment of other facilities for the industry. It is composed of 12 utility representatives and 8 nonutility members.

The Public Information Committee is charged with maintaining the news media relations, publishing materials for public distribution and coordinating the Council's public information activities. The Committee has established a network system of communications to serve news media in the event of operating emergencies extending beyond an individual utility's system, and to keep media advised of developments in regional operations and Council actions in which there is public interest.

Western Systems Coordinating Council Agreement provides in part that each member of the Council shall inform the Executive Committee of its plan for generation or transmission additions which significantly effect the reliability of operation of the interconnected bulk power systems and shall report any decision as to alterations or changes proposed for their respective electric systems. Pursuant to this Agreement, The Montana Power Company and other utility members of the Western Systems Coordinating Council yearly report their significant changes and additions in their power systems including generation and transmission. This information from all

member utilties is complied by the Western Systems Coordinating Council and distributed to all members of the Western Systems Coordinating Council. A copy of said report entitled "Report on Significant Additions and Changes in System Facilities" is attached hereto as Exhibit "C".

There has developed within various subregions of the Western Systems Coordinating Council criteria and practices which are designed to coordinate power. These efforts to coordinate power and power use practices are reported to the Federal Power Commission. A copy of said report entitled "Western Systems Coordinating Council Reply to Federal Power Commission Docket R-362 'Reliability and Adequacy of Electric Service'" is attached hereto as Exhibit "D".

The Montana Power Company has also participated in cooperative planning studies to assure reliable service within the State of Montana. For example, in 1972 representatives of the United States Bureau of Reclamation and Central Montana Electric Generation and Transmission Cooperative and The Montana Power Company conducted a study on transmission supply problems common to the three study participants. As a result of this study, the three member participants issued a report as a guide for future development of transmission systems within Central Montana. A copy of the report entitled "Central Montana Joint Transmission Planning Study" is attached hereto as Exhibit "E".

III. DESCRIPTION OF THE EFFORTS TO INVOLVE ENVIRONMENTAL PROTECTION AND LAND-USE PLANNING AGENCIES IN THE PLANNING PROCESS, AS WELL AS OTHER EFFORTS TO IDENTIFY AND MINIMIZE ENVIRONMENTAL PROBLEMS AT THE EARLIEST POSSIBLE STAGE IN THE PLANNING PROCESS.

The Montana Power Company's policy and practice are to communicate and cooperate with state and federal agencies on all energy environmental matters to the extent practicable.

Montana Power Company has advised the Regional Forest Service and the Bureau of Land Management that The Montana Power Company is interested in land-use planning and has requested participation and that Montana Power Company wishes to continue to take part in such planning. See copy of letter to the Regional Forester marked Exhibit "F" and the copy of letter to Bureau of Land Management marked Exhibit "G".

On the Colstrip Project in particular, The Montana Power Company directly and through its contractor, Westinghouse Environmental Department, has contacted numerous state and federal officials and agencies. A list of most of the federal agencies contacted in regard to the Colstrip Project is listed on Exhibit "H", and a list of the state agencies contacted in regard to the Colstrip Project is listed on Exhibit "I".

IV. WHAT IS THE PROJECTED DEMAND FOR POWER PROVIDED BY THE MONTANA POWER COMPANY?

The Montana Power Company's electric energy demand is expected to continue to increase at least at its present 5-6% annual rate of increase. This projection is based on and is consistent with national projections, historical experience in Montana and particular, known factors about Montana's future supply and demand.

Forecasters of the federal government and the electric industry expect the demand for electricity to continue to grow at an annual national average rate of 7% a year with a doubling every ten years.[1]

The Federal Power Commission appointed regional advisory committees to study the demand trend in each of the nations's six power supply regions. The advisory committees assisted by the Federal Power Commission developed forecasts for the 1970-1990 period. In 1969 the Federal Power commission issued a statement summarizing the results being forecasted for the nation as a whole. The 1980 electrical energy requirement was placed at 3.07 trillion kilowatthour, 14% higher than had been forecast by a similar survey in 1964. The upward adjustment of the 1980 forecast reflected the fact that demand was building at a faster rate than had been anticipated by the similar survey in 1964, and the belief that the 1970s would see a continuation of this growth trend. Attached is a chart showing past and future energy requirements in the Western region of the United States, marked Exhibit "J".

The peak demands by load centers from the same National Power Survey show the demand on certain Montana supply areas to increase from 1,460 megawatts in 1970 to 2,590 megawatts in 1980.

Power supply area	Load Center	Peak demand--megawatts 1970	1980	1990
30	Butte-Anaconda	700	1,240	2,260
	Billings	175	312	563
	Helena-Great Falls	330	587	1,060
	Kalispell-Missoula	220	390	707
	Unassigned	35	61	110
	TOTAL	1,460	2,590	4,700

It is interesting to note some of the observations of the Federal Power Commission concerning these demand projections from the 1970 National Power Survey. The study says it may seem paradoxical that in a time when many individuals are calling for curtailment

[1] "The Economy, Energy, and the Environment", A Background Study Joint Economic Committee, Congress of the United States, 1970, P. 9.

of power growth in the interests of environmental protection the best judgment of those whose business it is to study demand trends is that the nation's electrical requirements will very nearly quadruple between 1970 and 1990. Before getting at the reasons for this outlook, the Federal Power Commission divides the use of electricity in the United States into its major component parts which are as follows:

Categories of Electric Power Use
1965-1970-1990

Category of Use	Percent of Total Use 1965[1]	1970[2]	1990[3]
1. Industrial	41%	40%	41%
2. Residential	24%	25%	24%
3. Commercial	18%	18%	20%
Subtotal	83%	83%	85%
4. Miscellaneous, including losses	17%	17%	15%
TOTAL	100%	100%	100%

1. Actual
2. Preliminary
3. Projections

The first thing that stands out in this breakdown is that, apart from a modest but significant proportionate increase in commercial use, the basic use pattern over the next two decades is expected to remain about as it is today. The second thing that stands out, is that it is the use of electricity in industry rather than in the home that constitutes the largest demand. A third significant point is that commercial use is not far behind residential use in demand importance. These considerations make it clear that even if the American people were willing to cut corners in their use of electricity in the home, this of itself would not fundamentally alter the national demand outlook.

The 1970 National Power Survey of the Federal Power Commission also studies the supply outlook. At the end of 1963, the utility industry had an installed generating capacity of 211,000 megawatts and during that year the industry's reserve margin--that is, the amount of installed capacity in excess of peak load requirements--averaged 25%. The generating capacity needed to meet the projected 1980 peak load was placed at 527,000 megawatts which meant that more than 300,000 megawatts of new capacity would need to be installed over the period from 1964 to 1980. This was based on projections in 1964. However, in 1965 major sections of the country particularly the Northeast were blacked out by a massive power failure. These power failures pointed out several deficiencies

in the power supply system in the United States. They emphasized the need for strengthening the reliability of interconnected systems. At the end of 1970 it was thus projected that the utility industry would need to make an addition of some 325,000 megawatts during generating capacity during the 1970s, and 595,000 megawatts during the 1980s. In effect the industry's present plant capacity would need to be almost quadrupled during the next two decades.[2]

It is in view of this national and regional demand and supply picture that The Montana Power Company must make its own supply and demand projections, and its decisions and recommendations on regional coordination as it does through the Western Systems Coordinating Council (discussed above in Issue II) and other regional coordinating efforts.

Studies by The Montana Power Company indicate a significant increase in future demand for electric power in Montana. The average total load estimate for January 1963 was 635 megawatts and the peak total load estimate for January 1973 was 841 megawatts. In 1975 the average total load estimate is 717 megawatts and the peak total load estimate is 947 megawatts. In 1980 the January average total load estimate is 917 megawatts, and the peak total load estimate for January 1980 is 1,210 megawatts. (See the attached "The Montana Power Company Total Load Estimate 1973-1982" marked Exhibit "K".)

Furthermore, it is important to note that The Montana Power Company has had a deficiency in self-generated power in past years. Presently, this deficiency is accommodated by purchases and exchanges with other utility sources. For example, in January 1973, The Montana Power Company's self-generated resources of electric power totaled 768 megawatts. The Montana Power Company received an additional 263 megawatts from other utility sources. (See the attached "Winter 1972-73 Load and Resources" marked Exhibit "L".) By 1975, many of these other sources of power will no longer be available. As pointed out in The Montana Power Company total load estimates, in January 1975 the total peak load is projected to be 947 megawatts. (See Exhibit "K".) Obviously, Montana Power's present self-generated total of 768 megawatts would not be sufficient to meet the projected January 1975 peak load requirement of 947 megawatts. This is why "brownouts" are anticipated by 1975, unless The Montana Power Company adds additional generating capacity. The generation and transmission facilities discussed under Issue I, above, are designed to meet this critical and timely demand.

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[2]1970 Federal Power Survey, The Federal Power Commission, Pages I-1-12 -- Page I-1-19

EXHIBITS

EXHIBITS SUBMITTED WITH INITIAL LONG-RANGE PLAN
July 15, 1973

1. Exhibit "A" - The Montana Power Company - Generation and Transmission - Significant Additions 1973-1982, April 1, 1973.

2. Exhibit "B" - Projected Additions to Montana Power Company Transmission System for Ten Year Period Beginning in 1973.

3. Exhibit "C" - Western Systems Coordinating Council, "Report on Significant Additions and Changes in System Facilities", December 31, 1972.

4. Exhibit "D" - Western Systems Coordinating Council Reply to Federal Power Commission Docket R-362 "Reliability and Adequacy of Electric Service", April 1, 1972.

5. Exhibit "E" - Engineering Report Central Montana Joint Transmission Planning Study, January 1973.

6. Exhibit "F" - Letter to Regional Forester dated April 23, 1973.

7. Exhibit "G" - Letter to Bureau of Land Management dated May 8, 1973.

8. Exhibit "H" - List of Federal Agencies

9. Exhibit "I" - List of State Agencies

10. Exhibit "J" - 1970 National Power Survey, West Region - Past and Estimated Future Monthly Peak Demands.

11. Exhibit "K" - The Montana Power Company Total Load Estimate 1973-1982.

12. Exhibit "L" - Montana Power Company Winter 1972-73 Load and Resources.

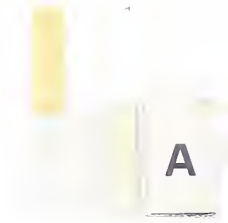
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EXHIBIT A

THE MONTANA POWER COMPANY

GENERATION & TRANSMISSION

Significant Additions 1973-1982
April 1, 1973

GENERATION

Colstrip No. 1 - 350 MW - Commercial Operation July 1975 (under construction

Colstrip No. 2 - 350 MW - Commercial Operation July 1976 " "

Colstrip No. 3 - 700 MW - Commercial Operation July 1978

Colstrip No. 4 - 700 MW - Commercial Operation July 1979

TRANSMISSION

Colstrip-Billings double circuit 230 kV line, 110 miles long, in service July 1975 (convertible to 500 kV)

North Billings-Ovando #1 500 kV line, 230 miles long, in service July 1976, operated at 230 kV until July 1978

Colstrip-North Billings #2 500 kV line, 110 miles long, in service July 1978

Ovando-Hot Springs #1 500 kV line, 90 miles long, in service July 1978

North Billings-Hot Springs #2 500 kV line, 320 miles long, in service by July 1979

Conversion of Colstrip-North Billings double circuit 230 kV line, 110 miles long to a single circuit 500 kV line, by July 1979

OTHER FACILITIES

Yellowstone River Pump Station and 26" pipeline from Yellowstone River to Colstrip for Units #1 and #2.

Additional pumping facilities and 36" pipeline from Yellowstone River to Colstrip for Units #3 and #4

ALTERNATE PLANS

If the 700 MW units do not materialize, a third 350 MW units is required at Colstrip by 1979. If the two 700 MW units were abandoned

by October 1973, the double circuit 230 kV line which is listed above as convertible to 500 kV from Colstrip to North Billings would not be built. In its place, two 230 kV lines from Colstrip to Billings would be constructed as listed below. Also, the other 500 kV lines listed above would not be constructed but the following 230 kV and 345 kV lines would be built:

Colstrip-Billings #2 230 kV line, 110 miles long, in service July 1975

Colstrip-Billings #3 230 kV line, 110 miles long, in service July 1976 (This line might be constructed at 345 kV instead of 230 kV.)

Billings-Anaconda #2 230 kV line, 220 miles long, in service July 1976

Great Falls-Billings #2 230 kV line, 183 miles long, in service July 1979

Colstrip-Billings #4 230 kV line, 110 miles long, in service July 1979 (This line might be constructed at 345 kV instead of 230 kV.)

100 MW gas turbine installation at either Billings, Great Falls, Anaconda or Helena, in service July 1978

In addition to the plans as listed above, there is possibility that Buffalo Rapids #2 and #4, 132 MW each hydroelectric projects, might be constructed by 1979 and Kerr hydroelectric project 60 MW Unit #4 might also be constructed by 1979.

EXHIBIT B

Projected Additions to tana Power Company Transmission System
For 10-Year Period Beginning in 1973
(Does not include items listed in Exhibit A)

March 30, 1973

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Anaconda-Hamilton 161 kV Transmission Line		ss	xxxxx	xxxxx						
Benchland-Glengarry 100 kV "B" Transmission Line	ss	xxxxx								
Billings East Side Substation 100 kV Loop Feed	xxxxx									
Billings-Laurel 100 kV "B" Transmission Line	xxxxx									
Billings-Roundup 100 kV Transmission line		ss	xxxxx							
Chance-Belfry 50 kV Transmission Line			ss	xxxxx						
Clyde Park-Bozeman 161 kV "B" Transmission Line	ss	xxxxx								
Clyde Park 161 kV Tie Line				xxxxx						
Colstrip-Forsyth 115 kV Transmission Line	ss	xxxxx								
Ennis-Mountain Village Substation 100 kV Transmission Line	ss	xxxxx								
Great Falls-Cut Bank 115 kV "B" Transmission Line					ss	xxxxx				
Great Falls 100 kV Tie Line		xxxxx								
Laurel-Bridger 100 kV Transmission Line	xxxxx									
Norris-Ennis-Sheridan-Renova 100 kV Transmission Line		xxxxx	xxxxx	xxxxx						
North Billings Transmission Line Corridor		xxxxx								

ss - Indicates date of survey work.
xxxxx - Indicates date of construction.

SEE ACCOMPANYING MATERIAL ENTITLED
"REPORT ON SIGNIFICANT ADDDITIONS AND
CHANGES IN SYSTEM FACILITIES"

D

SEE ACCOMPANYING MATERIAL ENTITLED
"WESTERN SYSTEMS COORDINATING COUNCIL
REPLY TO FEDERAL POWER COMMISSION
DOCKET R-362 'RELIABILITY AND ADEQUACY
OF ELECTRIC SERVICE'

SEE ACCOMPANYING MATERIAL ENTITLED
"ENGINEERING REPORT - CENTRAL MONTANA
JOINT TRANSMISSION PLANNING STUDY

F

EXHIBIT "F"

The MONTANA POWER COMPANY

GENERAL OFFICES
ELECTRIC BUILDING
BUTTE, MONTANA 59701

April 23, 1973

Regional Forester
Northern Region Federal
Building
Missoula, MT 59801

Dear Sir:

The Montana Power Company is interested in land-use planning and the planning unit proposals of various forests throughout Montana. The Montana Power Company has participated in the land-use planning of some forests in the past and wishes to continue to take part in such planning. Therefore, will you please keep Mr. Carl Anderson of our Company informed regarding land-use planning in any of the forests throughout Montana.

Thank you.

Sincerely,

John Ross
Environmental Attorney

JWR:mcs

cc: All Northern Region Supervisors

bcc: Bill Coldiron
Carl Anderson
Jim Couture
Don Olson

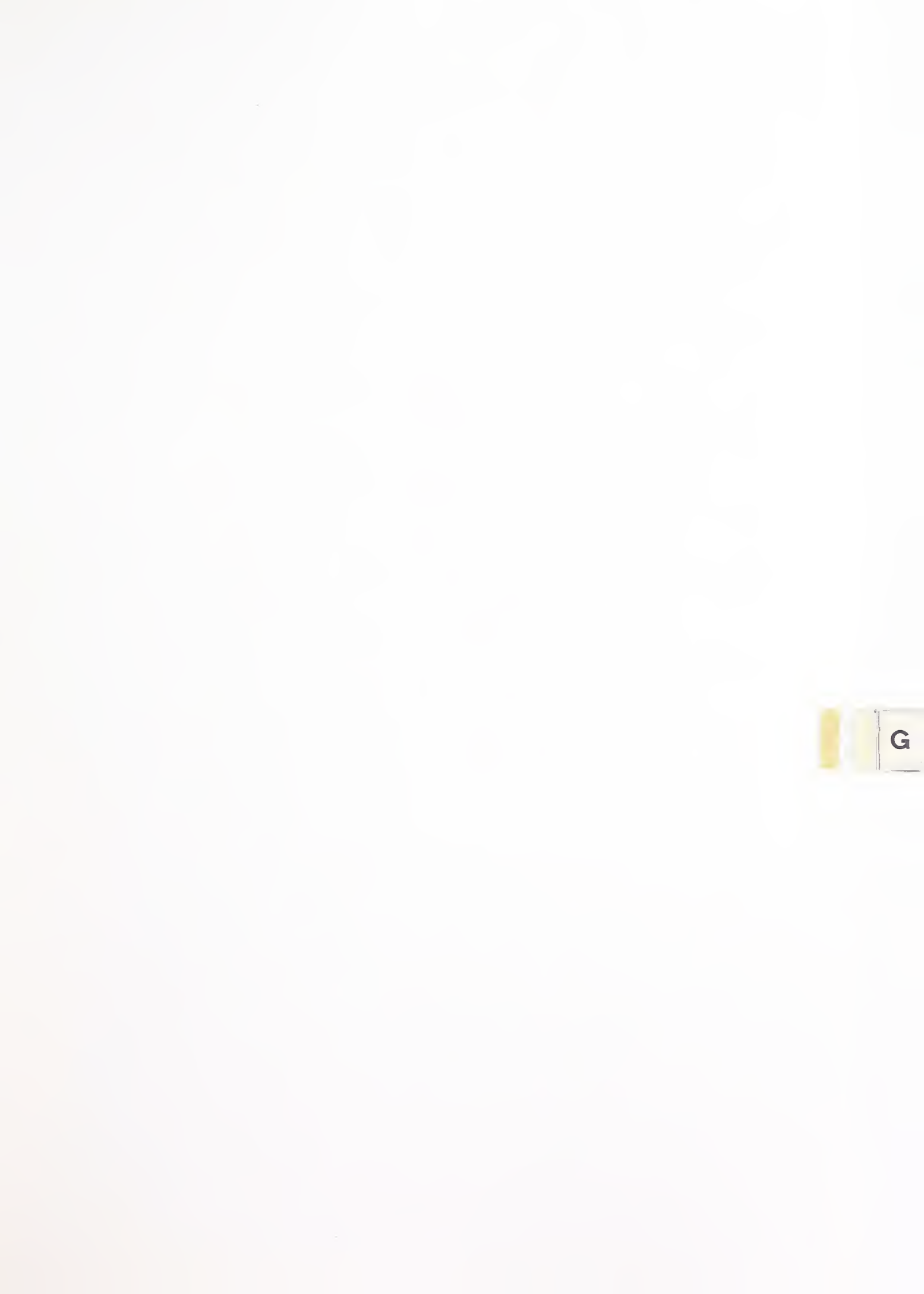
G

EXHIBIT "G"

The MONTANA POWER COMPANY

GENERAL OFFICES
ELECTRIC BUILDING
BUTTE, MONTANA 59701

May 8, 1973

Bureau of Land Management
State Office
3021 6th Ave. North
Billings, MT 59101

Dear Sir:

The Montana Power Company is interested in land-use planning and the planning unit proposals of the Bureau of Land Management throughout Montana. The Montana Power Company has participated in the land-use planning of some Districts in the past and wishes to continue to take part in such planning. Therefore, will you please keep Mr. Carl Anderson of our Company informed regarding land-use planning in any of your Districts in Montana.

Thank you.

Sincerely,

John Ross
Environmental Attorney

JWR:mcs

cc: All BLM Districts in Montana

bcc: Bill Coldiron
Carl Anderson
Jim Couture
Don Olson

Exhibit "H"

Federal Contacts

Department of Agriculture - T. C. Byerly, Office of the Secretary

Forest Service

Barry R. Flamm - Programs & Legislation Hqts.
Milo Jean Hassel - Programs & Legislation Hqts.
Melvin E. Loveridge - Division of Recreation Hqts.
Steve Yurich - Regional Forester
Keith Thompson - Regional Office Missoula
William A. Worf - Recreation and Lands, Regional Office
Vincent R. Price - Recreation and Lands, Regional Office
Gerald J. Contant - Recreation and Lands, Regional Office
Carl W. Wetterstrom - Water Storage Impacts, Regional Office
George N. Engler - Forest Supervisor, Lewis & Clark National Forest

Department of the Interior

Headquarters

Bruce Blanchard - Director, Environmental Project Review
Ernest E. Sligh - Office of Environmental Project Review
Daniel A. Jones - Bureau of Land Management
Henry J. Geiko - Bureau of Land Management
John E. Moon - Bureau of Land Management
Russell A. Soulen - Bureau of Outdoor Recreation
L. D. Norman - Bureau of Mines
Frank E. Clarke - U. S. Geological Survey
David E. Clark - National Park Service
Elwood A. Seaman - Assistant for Ecology, Commissioner of Reclamation

Field

Bureau of Land Management

Ed Montgomery - Denver
Edwin Zeidlicz - State Director
Ernest Kemmis - Montana State Office
Eugene H. Newell - Montana State Office
C. Rex Cleary - District Manager Billings District
Duane Sonnenburg - Area Manager

Bureau of Reclamation

Philip Q. Gibbs - Billings - Regional Office

U. S. Geological Survey

George M. Pike - District Chief - Helena
Ronald Shields - District Office - Helena
L. Grady Moore - District Office - Helena
Fern Aagaard - District Office - Helena

Bureau of Sport Fisheries and Wildlife

John Vander Walker - Environmental Coordinator - Denver Office

Environmental Protection Agency

Headquarters

Sheldon Myers - Office of Federal Activities
William Meggonell - Stationary Source Enforcement Division

National Environmental Research Center

Jean J. Schueneman - Director, Control Program Development Division
Edward J. Lillis - Control Program Development Division
David K. Berry - Control Program Development Division

Regional Headquarters - Denver

Donald P. Dubois - Deputy Administrator
Charles W. Murray - Director, Air and Water Programs

Federal Power Commission

Richard F. Hill - Advisor on Environmental Quality

Exhibit "I"

Summary of State Agency Responsibilities and Contacts

Environmental Quality Council

Chairman, Representative - Sen. Flynn (Missoula)
Ex. Director - Fletcher E. Newby
Contact - Fletcher E. Newby April 10, 1973

Fish and Game Department

Director - Wesley R. Woodgerd
Contacts - Wesley R. Woodgerd
James A. Posewitz - Environment and Information Chief

Department of Health and Environmental Sciences

Director - John S. Anderson

Environmental Sciences Division
Administrator - Benjamin F. Wake
Contact - Benjamin F. Wake

Air Quality Bureau
Chief - Donald R. Holtz
Contact - Donald R. Holtz

Water Quality Bureau
Chief - Donald G. Willems
Contact - Donald G. Willems

Department of Inter-Governmental Relations

Director - Ron Richards

Planning and Economic Development
Administration Division
Executive Director - Perry F. Roys

Community Development Division
Director - Harold M. Price
Contacts - Associate Planner-
Jim E. Richard

Economic Development Division
Director - William M. Spilker
Contact - William M. Spilker

Information Systems Division
Director - R. Thomas Dundas, Jr.

Research Division
Director - C. R. Draper
Contact - Research Assistant -
Gordon Jackson

Department of Natural Resources and Conservation

Director - Gary J. Wicks
Deputy Director - Ted J. Doney
Environmental and Legal Affairs -
Lawrence M. Jakub
Contacts: Mr. Doney and Mr. Jakub

Conservation Districts Division
Forestry Division
Oil and Gas Conservation Division

Water Resources Division
Administrator - Grant W. Buswell
Geologist - James Halloran
Economist - James Nybo
Groundwater Rights Coordinator -
Ronald Guse
Hydraulics Engineer - Charles Parrett
Surface Water Rights Coordinator -
Hans Bille

Engineering Bureau
Chief - Orrin Ferris

Resources and Planning Bureau
Chief - John Acord

Department of State Lands

Commissioner - Ted Schwinden
Land Administration
Administrator - Robert Raundal

Reclamation Division

Administrator - John Goers
Contact: John Goers

Resource Development Division

Administrator - Robert Duncan

EXHIBIT "J"

TABLE 4

WEST REGION

Past and Estimated Future Monthly Peak Demands

[Megawatts]

	January	February	March	April	May	June	July	August	September	October	November	December
1960												
PSA 31	289	275	268	251	247	274	295	304	303	299	314	328
PSA 32	945	895	882	832	839	912	975	981	965	946	1,024	1,054
PSA 36	577	573	616	669	688	735	789	861	733	669	715	717
PSA 39	404	400	392	398	406	461	472	467	465	426	439	459
PSA 30	703	721	739	713	716	703	722	695	690	718	722	775
PSA 41	1,239	1,201	1,201	1,217	1,344	1,447	1,440	1,418	1,369	1,233	1,297	1,316
PSA 42	1,319	1,255	1,300	1,250	1,231	1,289	1,163	1,132	984	1,019	1,140	1,225
PSA 43	2,663	2,472	2,566	2,241	2,195	2,057	1,943	2,088	2,126	2,364	2,648	2,642
PSA 44-45	4,311	4,109	4,259	3,730	3,768	3,406	3,435	3,617	3,693	3,826	4,221	4,256
PSA 46	4,829	4,543	4,649	4,580	4,735	5,370	5,525	5,320	4,958	4,846	4,906	5,043
PSA 47	5,725	5,656	5,540	5,587	5,398	5,637	5,927	5,829	6,257	6,166	5,890	6,267
PSA 48	1,300	1,259	1,515	1,531	1,706	1,969	2,010	2,003	2,022	1,640	1,508	1,614
WEST Region	24,304	23,359	23,927	22,999	23,273	24,260	24,696	24,715	24,565	24,152	24,824	25,668
1970												
PSA 31	640	620	590	590	590	620	640	660	620	640	670	715
PSA 32	1,920	1,830	1,790	1,750	1,750	1,830	1,940	1,920	1,850	1,870	2,040	2,130
PSA 36	1,270	1,200	1,340	1,400	1,410	1,470	1,740	1,790	1,500	1,320	1,450	1,440
PSA 39	910	880	870	870	920	990	1,035	1,010	980	950	960	1,000
PSA 30	1,390	1,310	1,270	1,230	1,240	1,200	1,230	1,260	1,260	1,290	1,390	1,460
PSA 41	2,410	2,270	2,140	2,120	2,400	2,670	2,840	2,780	2,530	2,360	2,410	2,440
PSA 42	2,090	2,000	1,960	1,980	2,080	2,120	2,010	2,040	1,970	1,960	2,040	2,140
PSA 43	5,470	5,010	4,900	4,800	4,440	4,200	4,150	4,320	4,380	4,950	5,300	5,240
PSA 44-45	8,570	8,040	7,650	7,410	7,230	6,970	6,790	7,050	7,140	7,590	8,300	8,460
PSA 46	10,100	9,810	9,800	9,700	9,980	11,000	11,000	11,200	10,200	10,000	10,400	11,100
PSA 47	11,800	11,600	11,600	11,600	11,100	11,700	12,400	12,700	12,600	12,600	12,800	13,300
PSA 48	3,260	3,230	3,440	3,480	3,860	4,230	4,490	4,450	4,180	3,710	3,310	3,530
WEST Region	49,830	47,800	47,350	46,930	47,000	49,000	50,265	51,180	49,210	49,240	51,070	54,031
1980												
PSA 31	1,410	1,370	1,300	1,290	1,290	1,350	1,410	1,440	1,350	1,400	1,480	1,579
PSA 32	3,810	3,640	3,550	3,380	3,470	3,640	3,850	3,810	3,680	3,720	4,060	4,220
PSA 36	2,440	2,330	2,610	2,710	2,750	2,850	3,380	3,480	2,920	2,580	2,820	2,960
PSA 39	1,920	1,850	1,830	1,830	1,940	2,090	2,180	2,140	2,070	2,010	2,030	2,130
PSA 30	2,460	2,330	2,260	2,180	2,190	2,140	2,190	2,240	2,230	2,290	2,460	2,560
PSA 41	4,840	4,550	4,280	4,240	4,810	5,350	5,690	5,560	5,060	4,720	4,840	4,940
PSA 42	2,820	2,700	2,640	2,670	2,800	2,860	2,710	2,740	2,650	2,650	2,750	2,760
PSA 43	11,200	10,200	10,000	9,780	9,070	8,600	8,480	8,840	8,950	10,100	10,800	11,750
PSA 44-45	16,700	15,700	14,900	14,400	14,100	13,600	13,200	13,800	13,900	14,800	16,200	17,000
PSA 46	21,800	21,100	21,100	20,900	21,500	23,600	23,700	24,100	21,900	21,500	22,400	23,800
PSA 47	24,700	24,100	24,100	24,200	23,000	24,400	25,800	26,500	26,300	26,100	26,600	27,700
PSA 48	6,960	6,880	7,330	7,410	8,230	9,020	9,570	9,470	8,900	7,900	7,060	7,510
WEST Region	101,060	96,750	95,900	94,990	95,150	99,500	102,160	104,120	99,910	99,770	103,500	109,420
1990												
PSA 31	2,840	2,740	2,610	2,580	2,580	2,710	2,840	2,900	2,710	2,800	2,960	3,150
PSA 32	7,230	6,910	6,750	6,420	6,580	6,910	7,310	7,230	6,990	7,070	7,710	8,030
PSA 36	4,470	4,270	4,790	4,980	5,040	5,230	6,190	6,380	5,360	4,720	5,170	5,300
PSA 39	3,600	3,480	3,440	3,440	3,640	3,930	4,090	4,010	3,890	3,760	3,800	3,950
PSA 30	4,470	4,230	4,100	3,960	3,980	3,880	3,970	4,070	4,040	4,150	4,470	4,700
PSA 41	9,740	9,170	8,620	8,540	9,700	10,800	11,460	11,200	10,200	9,510	9,740	9,840
PSA 42	3,590	3,430	3,360	3,390	3,560	3,640	3,450	3,490	3,370	3,360	3,500	3,750
PSA 43	21,500	19,600	19,200	18,700	17,400	16,500	16,300	16,900	17,200	19,400	20,500	22,500
PSA 44-45	31,600	29,600	28,200	27,300	26,600	25,700	25,000	26,000	26,300	28,000	30,600	32,400
PSA 46	46,600	45,200	45,200	44,700	46,000	50,500	50,800	51,600	47,000	46,100	48,000	51,000
PSA 47	49,000	47,900	47,800	48,000	45,800	48,400	51,200	52,500	52,300	51,900	52,900	55,000
PSA 48	15,000	14,800	15,800	15,900	17,700	19,400	20,600	20,400	19,200	17,000	15,200	16,200
WEST Region	199,640	191,330	189,870	187,910	188,580	197,600	203,210	206,680	198,560	197,770	204,550	216,420

EXHIBIT K

RCS 3/29/73

The Montana Power Company

TOTAL LOAD ESTIMATE

1973 - 1982

YEAR	JAN AV	JAN PK	FEB AV	FEB PK	MAR AV	MAR PK	APR AV	APR PK	MAY AV	MAY PK	JUN AV	JUN PK	JUL AV	JUL PK	AUG AV	AUG PK	SEP AV	SEP PK	OCT AV	OCT PK	NOV AV	NOV PK	DEC AV	DEC PK	ANNUAL DATA AV	ANNUAL DATA PK
1973	635	841	602	775	591	755	569	705	571	717	582	732	588	757	585	738	569	709	584	750	612	816	664	898	596	898
74	680	899	644	830	633	810	610	757	600	756	611	773	617	798	614	779	588	740	611	788	642	857	700	946	638	946
1975	717	947	678	875	667	854	642	797	631	796	644	715	650	841	646	821	628	776	642	827	676	900	735	993	663	993
76	752	999	711	919	700	897	673	835	661	835	676	856	680	883	676	862	657	810	671	865	707	941	772	1042	695	1042
77	791	1044	745	966	735	943	706	877	694	877	710	900	713	928	709	906	688	847	702	906	741	985	810	1095	729	1095
78	830	1096	781	1014	770	991	740	919	727	920	745	945	747	974	743	951	719	884	733	947	776	1030	849	1150	763	1150
79	871	1151	818	1065	807	1042	776	965	761	966	781	993	782	1024	778	999	752	924	766	991	812	1078	893	1202	800	1202
1980	917	1210	859	1120	848	1076	815	1013	799	1015	821	1035	820	1076	816	1050	788	966	803	1037	852	1129	938	1269	840	1269
81	963	1270	901	1176	890	1152	855	1063	838	1065	862	1098	860	1131	856	1103	825	1009	839	1085	892	1181	984	1333	880	1333
82	1012	1335	945	1237	934	1212	897	1116	879	1119	905	1155	901	1189	897	1160	863	1055	878	1136	935	1237	1036	1400	923	1400

1059/yr (1019) (913)

Σ 8166 7685 7215 7237 7161 7537 7350 7324 7077 7224 7645 8284

Index 1.15 1.08 1.07 1.03 1.01 1.04 1.04 1.03 1.00 1.02 1.08 1.17

FROM 8/1/72 FIRM LOAD ESTIMATE

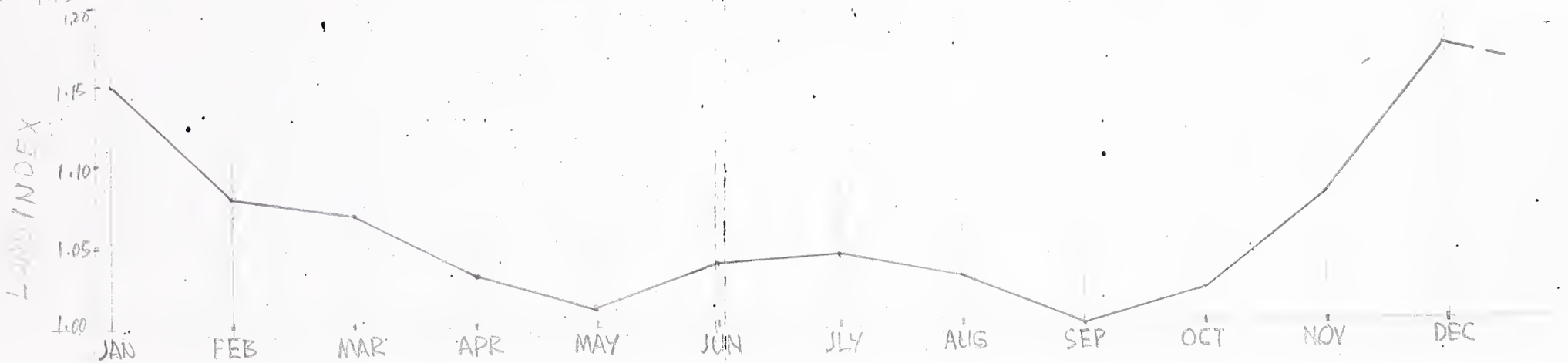

EXHIBIT "L"
WINTER 1972-73 LOADS AND RESOURCES

January 1973

Resources Responsibility

Resources	Megawatts		Load	
Hydro	518			
Corette	180			
Bird	70			
Total megawatts produced by Montana Power Company generating facilities. . .	768			
Contracts:				
BPA	50			
Wheeling	5			
WWP	5			
WWP MW-1	-30			
WWP Han. Trade	103			
WWP Han. Trade	-50			
PUMI	52			
Utah Trade	30			
Hanford	98			
Total megawatts received by Montana Power Company from other sources. . . .	263			
TOTAL MEGAWATTS FROM ALL SOURCES	1,031			
Less Maintenance	-8			
Less Reserves Above Interruptible	-63		Firm Peak Load Int. Peak Load	822 19
TOTAL RESOURCES- MPCo. Res. Resp.	960	14.6% res.	TOTAL LOAD- MPCo. Res. Resp.	841
BPA & USBR for Coops	44		BPA & USBR Coops	44
TOTAL RESOURCES- MPCo. Transm. Resp.	1,004	13.5% res.	TOTAL LOAD- MPCo. Transm. Resp.	885

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THE SMEAD MFG. CO.
HASTINGS, MINN. U.S.A.
No 118 DBE